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Smart Bus Ticketing Destination Announcement System Using QR-Code

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ABSTRACT

The biggest challenge in the current ticketing system is QUEUE. In this growing world we have to stand in the queue for purchasing tickets. Tickets can vary i.e., movie tickets, bus tickets, railway tickets, etc. The technology is growing quickly, therefore this should be modified. Smart Bus Ticketing Destination Announcement System Using QR-Code is mainly use to buy bus tickets which is most challenging when compared to book the long journey tickets with the existing system. With our system ticket can be booked with just a smart phone application and ticket information is stored in the form of QR code. In future travelling in bus is very easy with our application so that user can travel without more hard work. With the help of application user can search and plan there work flow easily? We are proposing this system for better performance to passengers. Existing system having manual work for ticketing system. That was very time consuming. Because of this system is useful. It is basically developed for passenger convenient. This application reduced passengers waiting time. And successfully reach their destination.

Keywords: QR-Code, AES, SHA 1, Android

NOMENCLATURE TABLE

Sr. No.	Short Form	Description
1	QR-Code	Quick Response Code
2	GPS	Global Positioning System
3	AES	Advanced Encryption Standard
4	SE	Self Encryption
5	API	Application Program Interface
6	SQL	Structural Query Language
7	RFID	Radio Frequency Identification
8	SDK	Software Development Kit
9	SHA 1	Secure Hash Algorithm

10	ASCII	American Standard for information interchange

I.INTRODUCTION

Public transport bus services are generally based on a regular operation of transit buses along a route calling at agreed bus stops according to a published public transport timetable. So peoples wait for the bus on bus-stop as they are unaware about timings of buses which lead to time wastage. Another is conductor required to conduct fare collection & passenger may face cash problems. Like these, there are many problems faced by the current system. To overcome these all we come up with a new system using android application which will reduce waiting time for passengers as well as many other problems. Due to growing world & importance of the time in day to day life there is need of effortless transport. So we are providing an Android application which will provide the information of vehicle location tracing and monitoring. It also includes the feature of density measure for the user convenience and nearest bus available on the route and will make the user up to date as bus moves. As we know the lots of work is done previously on this system to provide the user what they need & is to solve the various challenges. We develop android based project. Now a day's android is popular Concept. In this application we use QR-Code add money travelling details balance book ticket after that conductor scan QR Code. Admin having authority to add conductor, update conductor, Delete Conductor, Maintain Conductor Details, Maintain User Details. We develop this application because now a day's passenger facing lot of problems regarding to tickets. We develop our web as well as android based app here travelling details, passengers QR-Code stored. QR-Code is generate on passenger information it will contain passenger information like route information, destination information etc. Loan facility is also provided in this application.

II.EXISTING SYSTEM

The details of the destination bus stop and source bus stop are not mentioned on the tickets. Moreover, after the passenger reaches the destination, the ticket is of no use, and is thrown away. The problem is eliminated with the use of RFID based smart cards, the passenger can take a cashless ride.

III.DISADVANTAGES

- Existing system causes loss to economy.
- Existing system uses hardware which has high cost.

IV.PROPOSED SYSTEM

In proposed system, there will be 3 android applications, one for passengers, another for bus conductor and one for admin. The user also able to book a ticket by application by selecting source & destination then QR code will be generated. In Conductor's app, the conductor will scan QR code generated on passenger's app. If

passenger is not having QR-Code then we have offline registration option. User is able to visible QR-Code, Travel route information.

V.ADVANTAGES

- Provide solution with use of technologies already present in Smart phones.
- Minimize the use of paper as a conscious effort and little contribution towards Green IT and environment awareness.
- Easy to use user interface, so that passenger can adopt the application quickly.

VI.SYSTEM ARCHITECTURE

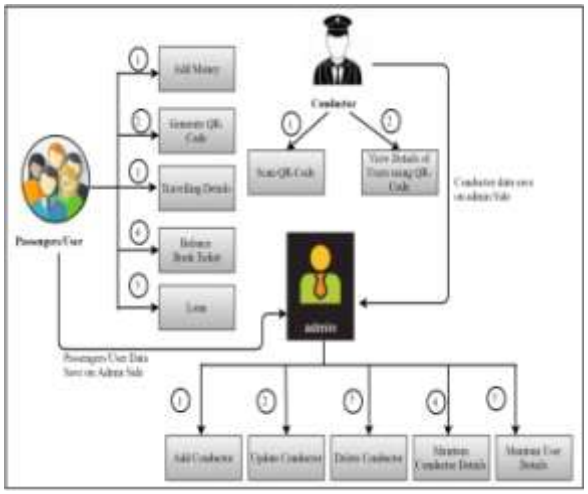

Fig 1: System Architecture

VII.ALGORITHM USED

A SECURE HASH ALGORITHM (SHA-1)

Secure hash is cryptographic hash function designed by United State National security Agency. It used to generate a condensed representation of a message called as message digest. Hash function takes a string of any length and reduces it to a unique fixed length string. It produces 160 bit (20 byte) hash value in the hexadecimal form. It is used for ensure data, message integrity, password validity etc. This algorithm is called as a secure because it is computationally infeasible to find a message which corresponds to a given message. Important properties of this algorithm are each hash is unique but always repeatable and the function is “One Way”.

STEPS

1. Initialize with some variable and pick up a string.
2. Break it into characters.
(Note: Spaces count as a characters.)
3. Convert the character into ASCII code.
4. Convert the numbers into binary format.
5. Add „1" to the end.
6. Append 0" s to the end.
7. Append original message length.
8. Chunk the message. Break the message up to in 512 bit chunks.
9. Break the „chunk" into „words" . Break the each chunk up to sixteen 32-bit words.
10. Extend into 80 words. Perform the XOR operation by selecting the four of the current words.
11. Perform the left rotation by factor of one.
12. Initialize with variables.
13. The main loop will be run once for each word in succession.
13. End.

B SQLITE

SQLite is RDBMS. SQLite is associate degree in-process library that implements a self-contained, server less, zero configurations, transactional. it's written in ANSI-C and provides straightforward and easy-to-use API. In distinction to several management systems, SQLite isn't a client-server information engine. The ASCII text file for SQLite is publicly domain. SQLite is ACID-complaint (Atomic, Consistent, Isolated and Durable), permitting safe access from multiple processes or threads. it's not a standalone method like different databases; you'll be able to link it statically or dynamically as per your demand together with your application. It will access its storage files directly. an entire SQLite information is hold on during a single cross-platform computer file. it's terribly little and lightweight weight, but 400KB totally designed. it's accessible on UNIX (Linux, OS-X, Android) and Windows (Win32, Win RT, WinCE).

C MYSQL

MySQL is open source relational database management system (RDBMS) which is freely available and makes use of Structured Query Language. It was widely used open source client server RDBMS. It is one of the best RDBMS being used for developing web-based software applications. MySQL is developed, marketed, and supported by MySQL AB, which is Swedish company. It makes use of a standard form of the well-known SQL data language. It has become popular because of its features. MySQL is released under an open-source license. So you need not require paying. It is capable of handling a large subset of functionality of the most expensive as

well as powerful database packages. It is scalable and it has the ability to handle almost any amount of data. It is a secure database. It includes solid data security layers which protect sensitive data from intruders. It supports the several development interfaces like JDBD, ODBC ad scripting (PHP and Perl). It can be executed under a number of operating system.

VIII.MATHEMATICAL MODEL

System Description:

System S as a whole can be defined with the following main components.

S= {I, O, P, S, C, P, Ad, Q}

S=System

C= Conductor

P=Passenger

Ad=admin

Q=QR-Code

Input I = {Input1, Input2}

Where,

Input1=QR-Code

Input2=User information

Procedures P= {Pr, Cc, Qid, Amt}

Where,

Pr= Passenger Register with QR-Code

Qid= Generate QR-Code Id

Cc= Conductor verify that QR-Code on mobile Phone

Amt= How many amount pay that also show

Output O = fOutput1, Output2g

Where,

{Output}=QR-Code successfully Verify

{Output2}=They reach destination without having any disturbance

{Initial State}= initially system will be in a state where user are not enrolled, Only admin of system.

{Final State}= QR-Code is successfully verify

IX.PROBLEM STATEMENT

Developing a smart bus ticketing system using Q-R Code will reduce waiting time passenger.

GOALS AND OBJECTIVE

- To develop an android application that is cost efficient.
- To make an efficient use of QR-code technique
- Provide solution without extra hardware requirement
- To make system easy to handle

X. CONCLUSION

We develop android base application we use QR-Code. QR-Code is used for storing passenger information. Travelling details are available in our system. Admin having authority to Add conductor, Delete conductor, Update Conductor. All Travelling details stored. Loan facility also provide in this system. Bus ticketing system is very useful and important mainly in cities. System having many advantages. System was made of a Bus ticketing module containing features to access dynamic vehicle location and send it to the server. Online payment based ticketing is also a very convenient option for travelling in a bus. This app is helpful for passenger and it is secure.

XI.FUTURE WORK

In future we use GPS for tracking bus. When bus is crash then we easily track the location of that bus. Provide security and suitable facility to passengers. Software requirements specification (SRS) is a document that is created when a detailed description of all aspects of the software to be built must be specified before the projectis to commence. It is important to note that a formal SRS is not always written. In fact, there are many instances in which effort expended on a SRS might be better spent in other software engineering activities.

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